simula

Annual Report 2015

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Simula Research Laboratory AS (Simula) conducts basic research in selected fields within software and communication technology. Simula is organized as a limited company and is owned by The Ministry of Education and Research.

The annual report includes the directors' report, financial statements, publication lists, as well as the report on social responsibility and work environment. A more detailed report on the activities is presented in a separate publication titled "This is Simula 2016".

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National research labs in Norway?



Professor Aslak Tveito
Managing Director Simula

All advanced economies seek ways of improving their competitive advantage in an increasingly competitive global marketplace. Research is seen as a central means toward strengthening innovation and bolstering job creation.

In Norway, almost all research is conducted in enterprises, universities and research institutes. While the universities are predominantly oriented toward fundamental research, Norway's research institutes are predominantly application-oriented. Simula Research Laboratory is almost unique in Norway in that it conducts fundamental research outside the university system and outside the research institute system. However, this is not the situation in comparable western countries.

During 2015, we visited 11 research organizations in several countries to investigate how fundamental research is organized and conducted outside the university sector. We found that all the other countries investigated (Austria, France, Germany, the Netherlands, the UK and the US) have a sector of national research laboratories of significant importance. Our findings are presented in the report 'Missed opportunities: National research labs in Norway'.

National research labs conduct a considerable proportion of total research in the countries investigated. In Germany and France, the share of research conducted by national research labs is about the same as that carried out by universities. In the US, the UK and the Netherlands, national research labs contribute significantly. In Austria, a new national research lab, IST Austria, was created in 2006. IST Austria has

been allocated a long-term budget, enabling the organization to be a major contributor to Austrian research. Norway stands out for its low proportion of basic research conducted outside the university sector.

The research quality of the examined national research labs is very high. Considering citations, high quality publication output and leadership in publications, national research labs are leaders in several of the examined countries. In Germany and France, they dominate the top-ten lists. In the Netherlands, Austria and Norway, several organizations are leaders, with the national research labs among the best performers. The US and the UK stand out with very strong domination of health research organizations among the leading performers.

Most of the countries investigated have explicit policies for organizations outside the university system that are oriented toward basic research — whether as to distinct policy areas (e.g., the Netherlands, Germany, the UK and France), according to funding agencies (the US), or, in the special case of Austria, a dedicated policy toward specific organizations. Norway has grouped most organizations outside the university system as 'research institutes' governed by one commonset of rules and one common set of funding mechanisms.

The Norwegian Government has set up a very ambitious long-term plan for research and higher education. The government will increase allocations to research and development activity in six long-term priority areas:

- the oceans
- climate change, the environment and environment-friendly energy
- public sector renewal and quality, more efficient welfare, healthcare services
- enabling technologies
- an innovative, adaptable private sector
- world-class research groups

The experience of Norway in addressing grand societal challenges has been that the universities are reluctant to shoulder such a challenge, preferring 'pure' research without any strains. Institutional and individual academic freedom are very strong and protected by law. Enterprises and research institutes have demonstrated a willingness and ability to solve applied research challenges. However, such directed fundamental research to address grand challenges is difficult to instigate in Norway. We believe that our experience from the investigated countries implies that national research labs could increase the quality and contribute to realizing the goals of Norwegian research, especially with regard to the societal challenges described in the long-term plan for research and higher education. We have thus asked the Norwegian Government to consider establishment of a network of research labs in Norway to address the grand challenges defined by the Government.



Dr. Kyrre Lekve
Deputy Managing Director

Report of the Board of Directors 2015

04

Simula Research Laboratory AS is part of the Simula Group and conducts fundamental long-term research on selected aspects of software and communication technologies, with the aim of contributing to creativity and innovation in business.

In its 14th operating year, Simula Research Laboratory AS and Simula Group achieved a turnover of NOK 147 million and NOK 190.8 million, and net results of NOK 11.9 million and NOK 16.2 million, respectively.

Administration and Organisation

Simula is organised as a limited company under the ownership of the Norwegian Ministry of Education and Research. The company combines academic traditions with recognised business management models. Simula Research Laboratory AS (Simula) is the parent company of Simula Innovation AS and Simula School of Research and Innovation AS. Simula Innovation is wholly-owned subsidiary, while Simula School of Research and Innovation is owned by Simula (56%), Statoil (21%), the municipality of Bærum (14%), Telenor (7%), the Norwegian Computing Center (1%), and Sintef (1%). The shares in Kalkulo were in 2015 transferred from Simula to Simula Innovation. Kalkulo is still a part of the Simula Group accounts. The parent company and its subsidiaries co-operate closely, and they are located in the Municipality of Bærum.

Activities

Simula conducts fundamental long-term research on communication in computer and mobile networks, scientific computing, and methods for developing and testing software systems. Our research focuses on fundamental challenges that combine technological development with utility value for industry and society as a whole.

Simula's research is published in international scientific journals and by leading non-fiction publishing companies. In 2015, Simula's research featured in 88 articles in international journals, 4 edited books, 1 book, 10 chapters in books and 86 peer reviewed conference proceedings.

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In addition to the University of Oslo, which is an important collaborator within the PhD education, degrees have also been awarded from NTNU, UiT, Ludwig-Maximillian Universität München, and Delft University of Technology.

The collaboration with University of California, San Diego (USCD) has expanded over the years, and in 2015 the SUURPh programme was formally established. The name SUURPh is an acronym for "The Simula-UiO-UCSD Research and PhD training programme". The joint doctoral programme with its focus on computational research in biomedicine, provides concurrent training to 15 students conducting research on topics that combine the expertise of the three partner institutions. As of 2015, Simula in collaboration with UiO, receives support to run the programme from the Ministry of Education and Research.

Personnel and HSE

At the end of 2015, Simula Group had a total of 144 employees, with 117 in full-time positions and 27 in part-time positions. Of these, 108 were men and 36 were women, with 67 Norwegians and 77 foreign nationals. 48 people were employed as research fellows, with 20 postdoctoral positions and 28 PhD students. In addition, there were 6 external PhD students who are supervised by Simulas researchers.

At the end of 2015, Simula Research Laboratory had a total of 66 employees, with 45 in full-time positions and 21 in part-time positions. Of these, 50 were men and 16 were women, with 38 Norwegians and 28 foreign nationals.

The board aims to continue its focus on HSE for the long-term. Absence due to illness was 2,2% for the Group and 3,1% for Simula in 2015. The Group will be working actively to keep sick leave at continued low levels. There were no reports of occupational diseases or accidents during the year. HSE incidents are now reported at each board meeting.

Simula's business activities do not pollute the external environment.



From left: Jan Helgesen, Annik Myhre, Özgü Alay, Ingvild Wasteson, Ernst Gunnar Gran, Ingvild Myhre (Chair of the Board), Mats Lunqvist, Aslak Tveito, Sverre Gotaas, Silvija Seres. Not present: Pinar Heggernes, Ingolf Søreide.

Equal Opportunity and Integration

The boards of Simula and SSRI have earlier adopted an action plan that aimed to increase the proportion of female employees in scientific positions to 30 per cent by 2017. By the end of 2015 the portion of female scientific researchers was 28 per cent. Recruiting female researchers for permanent scientific position has been important for Simula, and we are pleased to note that the proportion of female researchers in permanent positions have increased from 0 in 2010 to 25 per cent in 2015. Among PhD students and postdoctoral fellows, the portion is respectively 32 and 25 per cent.

Simula continues to work actively to improve the gender balance in the group through goal-oriented planning. In order to meet the target of 30 per cent female researchers by 2017, Simula will continue to focus on initiatives for both recruiting new and talented female candidates, and developing and adapting work situations for qualified women already employed by Simula.

The Group is also working to promote the objectives of the Anti-Discrimination Act, to promote equality, ensure equal opportunities and rights and to prevent discrimination in the workplace. There are 29 different nationalities represented in Simula Group. Over 53 per cent of the Group's employees come from outside Norway. Simula offers courses in Norwegian, social events and assistance with regard to visas, taxes, living accommodations and other administrative issues.

Ethics

Simula follows ethical guidelines as described in "The Simula Code of Ethics", which also comprises research ethics, based on the fact that Simula is an institution dedicated to truth and the pursuit of truth. The institution's reputation is dependent on others being able to trust that research results are correct and have been produced in a verifiable and ethically responsible manner. For questions regarding research ethics, Simula's researchers are to adhere to the guidelines set by the National Committee for Research Ethics in Science and Technology (NENT). In addition, all employees must follow Simula's internal guidelines for scientific publishing, which are based on the Vancouver Convention.

Risk

The Board considers financial risk, credit risk and liquidity risk to be low, and thus concludes that risks to the organisation are generally low.

Financial performance

In its 14th operating year, the Group had a turnover of NOK 190.8 million, an increase of 28.5% from the previous year. Operating results were NOK 17.4 million, with a net result of NOK 16.2 million.

Simula Research Laboratory AS had a total operating revenue of NOK 147 million in 2015. External project funding was a total of NOK 94 million. The net profit for the year was NOK 11.9 million, which was transferred to other equity. Equity in Simula Research Laboratory AS constitutes NOK 32.9 million, corresponding to an equity ratio of 49.3% of total assets.

Simula School of Research and Innovation AS had a total operating revenue of NOK 47.2 million in 2015, with a net result of NOK 0.3 million.

Simula Innovation AS had a total operating revenue of NOK 9.9 million, with a net result after tax of NOK 4 million in 2015 (after recognition of dividend from Kalkulo AS of 2.9 million).

In 2015, Kalkulo's total operating revenues amounted to NOK 26.2 million, with a net profit after tax of NOK 2.9 million.

Future Development

The board believes that our annual accounts provide a correct picture of Simula Research Laboratory AS and the Group. The Group is in a healthy economic and financial position.

In 2014, efforts were concentrated on acquiring more research projects, with a strong focus on EU projects. This effort resulted in several projects that started up during 2015. The number of new projects in 2015 has also been at a good level. Simula had especially good results in the Research Council's program FRINATEK.

The last year Simula formalized the collaboration with University of Bergen (UiB), and has established the limited company "Forskningssenteret for informasjons- og kommunikasjonssikkerhet AS" with the short name "Simula@UiB". Simula@UiB will from 2016 receive financial support from the Ministry of Transport and Communications.

In accordance with section 3, paragraph 3a of the Norwegian Accounting Act, conditions for continuing operations are confirmed present, and the annual accounts are prepared accordingly.

The work of the board of directors

Simula's board has had four meetings and a seminar in 2015. Sverre Gotaas started as a new board member as of the third board meeting in 2015. At the same time employee representative Magne Jørgensen signed off and was replaced by employee representative Özgü Alay. The cooperation between the board and management is good. The board would like to thank all employees for their strong contributions throughout the year.

Fornebu, March 9, 2016

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Income statement

SLR 2014	2015		Note	Simula Group 2015	2014
122.865.358	147.046.710	Operating Revenues	6	190.814.637	148.512.451
122.865.358	147.046.710	Total operating revenues		190.814.637	148.512.451
77.508.038	83.209.637	Salary and social costs	5	109.261.088	103.324.944
1.695.879	1.806.595	Depreciation	3	1.854.238	1.891.438
40.975.307	50.001.990	Other operating expenses		62.274.815	44.108.648
120.179.224	135.018.223	Total operating expenses		173.390.142	149.325.030
2.686.133	12.028.487	Operating profit financial items		17.424.495	-812.578
219.301	113.213	Other interest income		206.037	393.397
176.092	138.223	Other financial income		419.062	367.384
0	0	Write-down of shares		31.915	0
263.111	293.956	Other interest expenses		300.711	275.592
16.878	94.242	Other financial expenses		109.887	32.744
115.404	-136.762	Net financial items		182.586	452.445
2.801.537	11.891.725	Profit before tax		17.607.081	-360.133
0	0	Tax	13	1.411.860	103.077
2.801.537	11.891.725	Net profit		16.195.221	-463.210
0	0	Minority interests		113.820	-1.608.635
2.801.537	11.891.725	Profit after minority interest		16.081.401	1.145.425
		Allocation of the year's net profit			
2.801.537	11.891.725	Transferred to other equity			
2.801.537	**11.891.725**	**Total allocated**			

Balance sheet - assets

SRL 2014	2015		Note	Simula Group 2015	2014
		Fixed assets			
6.876.254	6.120.193	Furniture, fixtures, equipment	3	6.190.831	6.923.796
6.876.254	6.120.193	Total tangible fixed assets		6.190.831	6.923.796
5.319.700	5.319.700	Investments in subsidiaries	10	0	0
0	0	Loans to group companies		1.106.750	1.037.767
0	0	Investments in shares	12	11.809.505	7.940.600
5.319.700	5.319.700	Total financial fixed assets		12.916.255	8.978.367
12.195.954	11.439.893	Total fixed assets		19.107.086	15.902.163
		Current assets			
8.876.036	5.423.200	Account receivables		5.982.954	12.059.547
6.882.374	14.586.098	Other receivables		15.854.079	6.840.736
15.758.410	20.009.297	Total receivables		21.837.032	18.900.283
15.442.473	35.384.051	Bank deposits	9	46.022.804	28.313.699
31.200.883	55.393.349	Total current assets		67.859.837	47.213.982
43.396.837	**66.833.242**	**Total assets**		**86.966.922**	**63.116.145**

Balance sheet - equity and liabilities

SRL 2014	2015		Note	Simula Group 2015	2014
		Equity			
1.200.000	1.200.000	Share capital	7.8	1.200.000	1.200.000
1.200.000	1.200.000	Total paid-in equity		1.200.000	1.200.000
19.773.249	31.664.974	Other equity	8	45.642.612	29.561.210
0	0	Minority interests	8	1.926.356	1.812.536
19.773.249	31.664.974	Total retained earnings		47.568.968	31.373.746
20.973.249	32.864.974	Total equity		48.768.968	32.573.747
		Liabilities			
0	0	Deferred tax	13	99.487	135.440
0	0	Total provisions		99.487	135.440
4.166.670	3.833.338	Debt to credit institutions	15	3.833.338	4.166.670
4.166.670	3.833.338	Total other long term debt		3.833.338	4.166.670
5.420.324	15.325.550	Accounts payable		4.982.123	4.138.561
0	0	Tax payable	13	1.447.813	139.905
2.416.421	4.454.314	Public duties payable		10.110.842	8.772.972
10.420.173	10.355.065	Other current liabilities		17.724.350	13.188.851
18.256.918	30.134.929	Total current liabilities		34.265.129	26.240.288
22.423.588	33.968.267	Total liabilities		38.197.954	30.542.398
43.396.837	66.833.242	Total equity and liabilities		86.966.922	63.116.145

Notes to the accounts

Note 1 – Accounting principles

The financial statements have been prepared in accordance with the regulations of the Norwegian Accounting Act of 1998 and generally accepted accounting principles.

General rule for valuation and classification of assets and liabilities

Assets intended for permanent ownership or long-term use have been classified as fixed assets. Other assets have been classified as current assets. Receivables to be repaid within one year are classified as current assets. Similar criteria have been applied to the classification of current and long-term liabilities.

Fixed assets are valued at aquisition cost, but written down to fair value for any impairments that are not expected to be temporary. Fixed assets with a limited economic life are depreciated over the useful life of the asset. Long-term liabilities are recognised at nominal value in the balance sheet on the date they are incurred. Long-term liabilities are not revalued to fair value as a result of due to changes in interest rates.

Current assets are valued at the lower of cost and fair value. Current liabilities are recognised at nominal value in the balance sheet on the date they are incurred. Current liabilities are not appreciated to fair value as a result of changes in interest rates.

Certain items are valued according to other principles, as explained below.

Foreign Currency transactions

Assets and liabilities in foreign currency are translated into Norwegian kroner at the mid-rates quoted by Norway´s National Bank on the balance sheet reporting day.

Tangible fixed assets

Tangible fixed assets are depreciated over the expected useful life of the asset. Depreciation is generally performed in a straight line over the expected useful life of the asset.

Receivables

Accounts receivables and other receivables are recognised at nominal value less provisions for anticipated losses from bad debt. Provisions for losses are based on an individual assessment of each receivable. In addition, if necessary, a general provision is made to cover expected losses on other receivables.

Pensions

Pensions are accounted for using a linear accrual profile and anticipated final salary as the accrual basis.

Tax

The company has not recognised tax expenses in the parent company's financial statements, since the operation is not considered to be liable for tax.

Revenue recognition

Revenues are recognised when delivery has taken place.

The Group

The consolidated financial statements comprise the parent company Simula Research Laboratory AS (SRL) and the subsidiaries Simula School of Research and Innovation AS (SSRI), Simula Innovation AS (SI) and Kalkulo AS. Although the Group owns 60% of Celerway Communication AS, it is not included in the consolidated financial statements. The consolidated financial statements are prepared as if the Group were one economic entity. Transactions and balances between group companies are eliminated.

Note 2 – Financial market risk

The company has little exposure to financial market risk.

Note 3 – Fixed assets

SRL	Computer equipment	Furnishings, fixtures, equipment, etc	Total
Acquisition cost as of 01.01	6.288.176	16.306.264	22.594.440
Additions	873.259	299.174	1.172.433
Disposals	121.899	-	121.899
Acquisition cost as of 31.12	7.039.536	16.605.438	23.644.974
Cumulative depreciation as of 31.12	-6.111.739	-11.413.042	-17.524.781
Book value as of 31.12	927.797	5.192.396	6.120.193
Year's depreciation	633.654	1.172.941	1.806.595

Simula Group	Computer equipment	Furnishings, fixtures, equipment, etc	Total
Acquisition cost as of 01.01	7.304.021	16.306.264	23.610.285
Additions	943.998	299.174	1.243.172
Disposals	121.899	-	121.899
Acquisition cost as of 31.12	8.126.120	16.605.438	24.731.558
Cumulative depreciation as of 31.12	-7.127.685	-11.413.042	-18.540.727
Book value as of 31.12	998.435	5.192.396	6.190.831
Year's depreciation	681.297	1.172.941	1.854.238

The economic life of operating assets is calculated as:
* Computer equipment 2-5 years
* Furnishings, fixtures & equipment 3-5 years

Note 4 – Pensions

The Group has a duty to maintain an occupational pension scheme in accordance with the Mandatory Occupational Pension Schemes Act. The company's pension schemes fulfil the requirements of this legislation.

The Group has a pension scheme which covers all employees. The scheme entitles members to defined future benefits. These are primarily dependent on the number of years of pension accrual, salary level at retirement and the size of the pension benefits received from the Norwegian National Insurance Scheme. The occupational pension scheme is financed through the build-up of funds in the Norwegian Public Service Pension Fund.

Note 5 – Payroll costs, number of employees, remunerations, employee loans and auditor's fees

Salary and social costs	SRL 2015	SRL 2014	Simula Group 2015	Simula Group 2014
Salary	40.484.742	23.677.159	84.091.877	80.258.327
Social security	5.882.680	3.892.074	12.754.759	12.636.717
Pension costs	3.868.294	2.094.675	7.146.575	5.661.692
Other benefits	4.187.883	3.724.962	5.267.877	4.768.208
Contribution to cover cost of labour at SSRI	27.123.592	24.849.446		
Contribution to cover cost of labour at SI	1.603.064	19.130.586		
Contribution to cover cost of labour at Kalkulo	131.331	139.136		
Total	83.281.586	77.508.038	109.261.088	103.324.944
Number of full-time equivalents	51	25	124	114

In February 2015 the employment contracts of 20 researchers were transferred from SI to SRL.

Remuneration paid to senior company officers	Managing Director	Board of Directors
Salary	2.038.340	461.425
Pension costs	462.959	-
Other benefits	217.588	-
Total	2.718.887	461.425

No loans have been granted to, nor any guarantees made on behalf of, the Managing Director, the Board Chair or any other related parties. No loans or guarantees account for more than 5 % of the company's share capital.

Auditor

The auditor's fees break down as follows:

Parent company	
Statutory auditing services	88.000
Other services	57.900
Total auditor's fees	145.900

Subsidiaries	
Statutory auditing services	87.200
Other services	32.200
Total auditor's fees	119.400

The auditor's fee is stated exclusive of VAT.

Note 6 – Operating revenue

	SRL		Simula Group	
	2015	2014	2015	2014
Research funding	53.000.000	52.000.000	58.000.000	57.000.000
Subsidies from the Research Council of Norway, EU, etc.	86.173.375	64.169.571	106.573.527	65.169.571
Services provided by subsidiaries	7.798.878	6.649.787	-	-
Other income	74.457	46.000	26.241.110	26.342.880
Total	147.046.710	122.865.358	190.814.637	148.512.451

Note 7 – Share capital and shareholders

SRL

Share capital	Number of shares	Nominal value	Share capital
Ordinary shares	800	1.500	1.200.000
Total	800		1.200.000

The company's shareholders as of 31.12	Number of shares	Shareholding
The Norwegian state represented by the Ministry of Education and Research	800	100,0 %
Total no. of shares	800	100,0 %

Note 8 – Equity

SRL	Share capital	Other equity	Total
Equity as of 01.01	1.200.000	19.773.249	20.973.249
Profit/loss for the year	11.891.725	-	11.891.725
Equity as of 31.12	13.091.725	19.773.249	32.864.974

Simula Group	Share capital	Other equity	Minority interests	Total
Equity as of 01.01	1.200.000	29.561.210	1.812.536	32.573.746
Profit/loss for the year	-	16.081.402	113.820	16.195.222
Equity as of 31.12	1.200.000	45.642.612	1.926.356	48.768.968

Note 9 – Bank deposits

	SRL	Simula Group
Restricted tax withholdings total	2.254.389	4.216.044
Restricted bank deposits relating to leasing contracts total	3.056.256	3.056.256

Note 10 – Subsidiaries, associates, etc

Simula Group	Acquired	Office	Country	Shareholding
Simula Innovation AS	04.05.2004	Fornebu	Norge	100%
Simula School of Research and Innovation AS	08.05.2007	Fornebu	Norge	55,74%

In 2015 Kalkulo AS, which is wholly owned by Simula Innovation AS, posted a profit of NOK 2.912.403. Recognised equity as of 31.12.15 totals NOK 3.646.234 after provisions for a dividend payment of NOK 2.900.000. Dividend is taken to income in the parent company in 2015.

Note 11 – Balances and transactions between group companies and associates

	2015	2014
Receivable from SI AS	13.033.753	5.058.748
Receivable from Kalkulo AS	400.072	24.222
Receivable from SSRI AS	34.138	-
Receivable from Celerway Comm. AS	-	8.330
Payable to SI AS	1.642.313	3.543.719
Payable to Kalkulo AS	91.242	1.319.987
Payable to SSRI AS	9.382.996	4.109.672
Payable to Celerway Comm. AS	1.307.647	201.500
Salary costs refunded from SI AS	251.996	795.046
Salary costs refunded from Kalkulo AS	159.580	-
Salary costs refunded from SSRI AS	1.470.944	-
Salary costs refunded to SI AS	1.603.064	19.130.586
Salary costs refunded to Kalkulo AS	131.331	-
Salary costs refunded to SSRI AS	27.123.592	24.784.927
Sale of services, etc, to SI AS	975.450	884.000
Sale of services, etc, to AS	1.500.000	1.770.000
Sale of services, etc, to SSRI AS	3.281.355	3.200.740
Sale of services, etc, to Celerway Comm. AS	159.553	-
Purchase of services, etc, from SI AS	4.699.272	3.198.223
Purchase of services, etc, from Kalkulo AS	2.559.535	2.188.750
Purchase of services, etc, from SSRI AS	2.946.398	662.989
Purchase of services, etc, from Celerway Comm, AS	5.204.057	-

Note 12 – Securities and shares in other enterprises, etc

	Quantity	Nominal value per share	Shareholding	Cost price
Expert Analytics AS	5.294	1	15,0 %	600.000
Testify AS	44.433	1	30,0 %	1.427.117
Expertware AS	30.000	1	30,0 %	31.914
Forzasys AS	53.020	0,34	30,0 %	1.538.295
Fabriscale Technologies AS	15.954	1	45,0 %	1.510.514
LABO Mixed Realities AS	538	100	35,0 %	1.199.740
Symphonical AS	1.005.528	0,1	5,0 %	1.325.151
Intelliview AS	15	500	20,0 %	1.000.000
Edgefolio AS	10.412	0,48	10,2 %	1.200.048
Radytek, Polen	34	-	33,3 %	3.045
Insilicomed Inc, USA	131.945	USD 1,8		1.220.755
Imerso AS	626	500	12,5 %	313.000
Celerway Communications AS	22.500	1	60,0 %	3.017.745
Write-down of shares				2.577.819
Total investment in associates				**11.809.505**

Note 13 – Tax

The activities of Simula Research Laboratory AS and its subsidiary Simula School of Research and Innovation AS are not considered taxable.

The subsidiaries Simula Innovation AS og Kalkulo AS are liable for tax.

Simula Group

Taxation for the year consists of:	2015	2014
Tax payable	1.447.813	139.904
Change in deferred tax	-35.953	-36.827
Total tax expense	**1.411.860**	**103.077**

Tax payable for the year is calculated as follows

Profit before tax	8.358.425	558.177
Permanent differences	-3.102.456	19.917
Change in temporary differences	106.299	136.398
Group contribution paid	-	-196.329
Taxable income	**5.362.268**	**518.163**

Temporary differences

Other differences	503.316	606.486
Fixed assets	-76.787	-73.657
Write-down of shares	-1.220.754	-1.220.754
Total basis for deferred tax asset	-794.225	-687.925
Deferred tax liability/asset	-198.556	-185.740
Unrecognised deferred tax asset	-298.043	-321.179
Recognised deferred tax liability	**99.487**	**135.440**

Note 14 – Rental and leasing contracts

The company has entered into three leasing agreements with respect to photocopiers and computer equipment which expire in 2016 and 2017 The year's cost totals NOK 1,211,121

Note 15 – Receivables and liabilities

Non-current liabilities maturing more than 5 years hence	SRL 2015	2014	Simula Group 2015	2014
Debt to credit institutions	3.833.338	4.166.670	3.833.338	4.166.670
Total	**3.833.338**	**4.166.670**	**3.833.338**	**4.166.670**
Secured debt	3.833.338	4.166.670	3.833.338	4.166.670
Assets pledged as securities				
Accounts receivables	5.000.000	5.000.000	5.000.000	5.000.000
Operating assets	2.500.000	2.500.000	2.500.000	2.500.000
Total	**7.500.000**	**7.500.000**	**7.500.000**	**7.500.000**

Cash flow statement

SRL 2014	2015		Simula Group 2015	2014
		Cash flow from operating activities		
2.801.537	11.891.725	Net profit for the year	16.195.221	-463.210
1.695.879	1.806.595	Depreciation and write-downs	1.854.238	1.891.438
-	-	Change in value of shares	31.915	-
8.039.200	-4.250.887	Change in receivables	-3.005.732	2.870.347
-19.600.594	11.878.011	Change in current liabilities	8.024.840	-13.653.079
-7.063.978	**21.325.444**	**Net cash flow from operating activities**	**23.100.482**	**-9.354.504**
		Cash flow from investing activities		
-1.276.124	-1.050.544	Net investments in operating assets	-1.121.283	-1.326.383
		Net investments in/sale of shares	-3.900.819	-1.560.778
-1.276.124	**-1.050.544**	**Net cash flow from investing activities**	**-5.022.102**	**-2.887.161**
		Cash flow from financing activities		
-333.332	-333.322	Repayments of loans	-333.322	-333.332
-	-	Change in deferred tax	-35.953	-36.827
-333.332	**-333.322**	**Net cash flow from financing activities**	**-369.275**	**-370.159**
-8.673.434	19.941.578	Net cash flow for the year	17.709.105	-12.611.824
24.115.907	15.442.473	Cash holdings 01/01	28.313.699	40.925.523
15.442.473	**35.384.051**	**Cash holdings 31/12**	**46.022.804**	**28.313.699**

LUNDES Revisjonskontor DA

Til generalforsamlingen i
SIMULA RESEARCH LABORATORY AS

REVISORS BERETNING FOR 2015

Uttalelse om årsregnskapet
Vi har revidert årsregnskapet for SIMULA RESEARCH LABORATORY AS som består av selskapsregnskap, som viser et overskudd på kr. 11.891.725,-, og konsernregnskap, som viser et overskudd på kr. 16.081.401,-. Selskapsregnskapet og konsernregnskapet består av balanse per 31. desember 2015, resultatregnskap og kontantstrømoppstilling for regnskapsåret avsluttet per denne datoen, og en beskrivelse av vesentlige anvendte regnskapsprinsipper og andre noteopplysninger.

Styret og daglig leders ansvar for årsregnskapet
Styret og daglig leder er ansvarlig for å utarbeide årsregnskapet og for at det gir et rettvisende bilde i samsvar med regnskapslovens regler og god regnskapsskikk i Norge, og for slik intern kontroll som styret og daglig leder finner nødvendig for å muliggjøre utarbeidelsen av et årsregnskap som ikke inneholder vesentlig feilinformasjon, verken som følge av misligheter eller feil.

Revisors oppgaver og plikter
Vår oppgave er å gi uttrykk for en mening om dette årsregnskapet på bakgrunn av vår revisjon. Vi har gjennomført revisjonen i samsvar med lov, forskift og god revisjonsskikk i Norge, herunder International Standards on Auditing. Revisjonsstandardene krever at vi etterlever etiske krav og planlegger og gjennomfører revisjonen for å oppnå betryggende sikkerhet for at årsregnskapet ikke inneholder vesentlig feilinformasjon.

En revisjon innebærer utførelse av handlinger for å innhente revisjonsbevis for beløpene og opplysningene i årsregnskapet. De valgte handlingene avhenger av revisors skjønn, herunder vurderingen av risikoene for at årsregnskapet inneholder vesentlig feilinformasjon, enten det skyldes misligheter eller feil. Ved en slik risikovurdering tar revisor hensyn til den interne kontrollen som er relevant for selskapets utarbeidelse av et årsregnskap som gir et rettvisende bilde. Formålet er å utforme revisjonshandlinger som er hensiktsmessige etter omstendighetene, men ikke for å gi uttrykk for en mening om effektiviteten av selskapets interne kontroll. En revisjon omfatter også en vurdering av om de anvendte regnskapsprinsippene er hensiktsmessige og om regnskapsestimatene utarbeidet av ledelsen er rimelige, samt en vurdering av den samlede presentasjonen av årsregnskapet.

Etter vår oppfatning er innhentet revisjonsbevis tilstrekkelig og hensiktsmessig som grunnlag for vår konklusjon.

Konklusjon
Etter vår mening er årsregnskapet avgitt i samsvar med lov og forskifter og gir et rettvisende bilde av selskapets og konsernet SIMULA RESEARCH LABORATORY AS' finansielle stilling per 31. desember 2015 og av resultatet og kontantstrømmen for regnskapsåret som ble avsluttet per denne datoen i samsvar med regnskapslovens regler og god regnskapsskikk i Norge.

Dronningens gate 6, 0152 Oslo
Tlf.: 22 00 45 00 - Fax: 22 42 00 55
E-mail: firmapost@lundes-revisjon.no
Revisornr.: 971 142 952
Bankgiro 6030.05.53128

LUNDES Revisjonskontor DA

Uttalelse om øvrige forhold
Konklusjon om årsberetningen
Basert på vår revisjon av årsregnskapet som beskrevet ovenfor, mener vi at opplysningene i årsberetningen om årsregnskapet, forutsetningen om fortsatt drift og forslaget til anvendelse av overskuddet er konsistente med årsregnskapet og er i samsvar med lov og forskrifter.

Konklusjon om registrering og dokumentasjon
Basert på vår revisjon av årsregnskapet som beskrevet ovenfor, og kontrollhandlinger vi har funnet nødvendig i henhold til internasjonal standard for attestasjonsoppdrag (ISAE) 3000 «Attestasjonsoppdrag som ikke er revisjon eller forenklet revisorkontroll av historisk finansiell informasjon», mener vi at ledelsen har oppfylt sin plikt til å sørge for ordentlig og oversiktlig registrering og dokumentasjon av selskapets regnskapsopplysninger i samsvar med lov og god bokføringsskikk i Norge.

Oslo, den 9. mars 2016

Erik A. Bell
Statsautorisert revisor

Social responsibility and workplace environment

Simula Research Laboratory is a nonprofit public utility enterprise. The company contributes to society by engaging in basic long-term research within the fields of communication systems, scientific computing, and software engineering. In addition, Simula conducts education and fosters innovation on basis of the research, and with support and services from the subsidiary companies Simula School of Research and Innovation (SSRI) and Simula Innovation (SI).

To reach its goals, Simula is continuously working to ensure good working conditions. The following summary highlights some of the topics Simula is addressing in order to maintain and develop its standards within ethics, gender balance, and general working conditions.

Ethics

Maintaining high ethical standards has a value in itself for both Simula and each individual employee. In addition it is part of Simula's responsibility as a contributor to Norwegian society, and it is a fundament for trust from the outside world. Simula's code of ethics is developed with the purpose to increase awareness of, and compliance with, the high ethical standards required of the employees. The code of ethics includes topics such as research ethics; the working environment and inclusion; gifts, enticements and corruption; confidentiality; and conflicts of interest.

Equality and diversity

It is an important objective for Simula to be a workplace where men and women are given the same opportunities for professional and personal development. In order to strengthen the focus and to follow up on the promising results shown in our previous work[1] on improving the gender balance, Simula will continue to focus on initiatives for both recruiting new and talented female candidates, and for developing and adapting work situations for qualified women. Simula will pursue the goal of a minimum 30 per cent female contingent among scientific staff by 2017.

Simula's workplace is diverse in both cultural and national origin, and currently more than 53 per cent of the employees are from countries outside Norway. The employees represent 29 different nationalities. Simula takes different measures to make the transition to a Norwegian workplace effective and positive, including administrative support and Norwegian language training.

Working environment

Simula aspires to be an excellent workplace. This will be ensured through an internal inspection system that addresses health, safety and the working environment. The Working Environment Committee at Simula makes efforts to develop and maintain the quality of the working environment. It participates in planning, and follows up questions concerning the safety, health and welfare of the employees.

Absence due to illness is in general low at Simula, and the sickness absence rate per 31.12.2015 was 2.2% in Simula.

The results of a working environment survey conducted in 2014 were overall very good and confirm that the working environment at Simula is in a good condition and that the employees thrive. Efforts continue to follow up the results in the individual units and in Simula as a whole, and workplace surveys will be conducted regularly.

Simula has entered into an agreement with NAV (the Norwegian Labour and Welfare Organisation) concerning "the inclusive workplace". The purpose of the agreement is to prevent and reduce absence related to illness, strengthen job attendance and improve the working environment, as well as avert exclusion and withdrawal from working life. Simula had two individuals in workplace training over a total of 21 weeks as part of this agreement. An action plan with focus on how Simula addresses these matters is discussed with NAV annually.

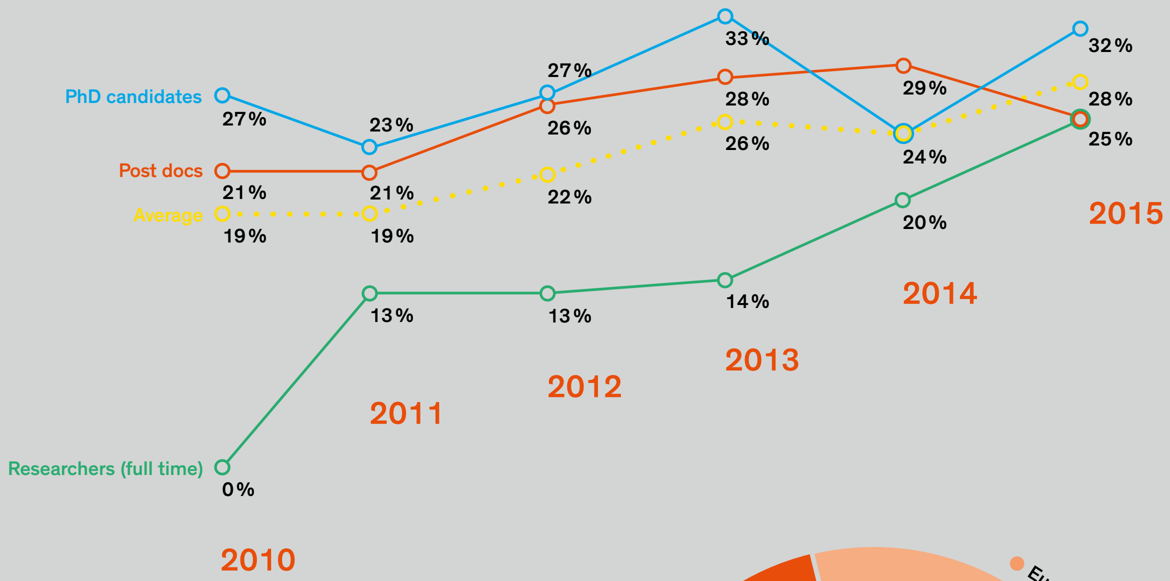
Competence development and recruitment

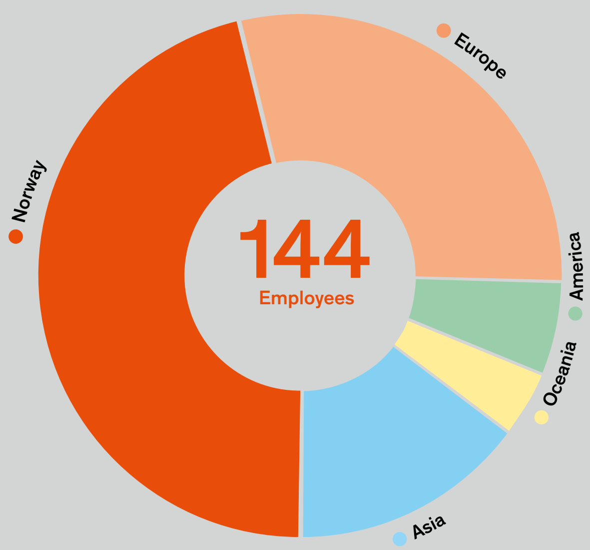
Simula is dependent on competent and motivated employees with specific expertise in order to reach its targets. Simula works continuously to attract, develop and retain talented employees with varied backgrounds. Simula's leaders play a key role with respect to Simula's results. Simula facilitates professional and personal development to enhance expertise.

*[1] See figure 1. p. 24

Gender balance

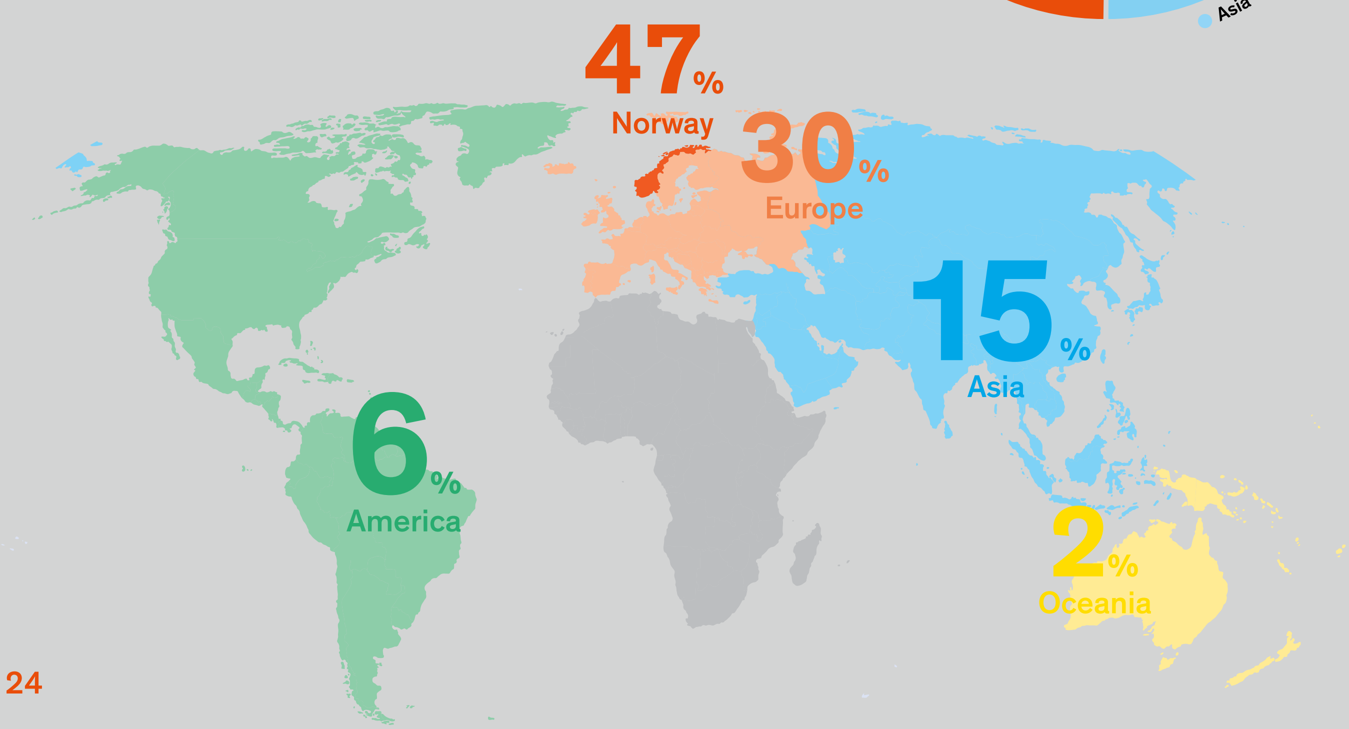
Simula is aiming to have at least 30 per cent female employees in scientific positions by 2017.





Nationalities

Simula is proud of its international environment and cultural diversity, employing 144 exeptional minds of 29 different nationalities.



Conflict resolution and notification of censurable conditions

Simula will ensure a safe and secure working environment in accordance with the company's principles on workplace culture. Simula has developed guidelines for conflict resolution and notification, meeting all the requirements in the personnel guidelines and the Working Environment Act. These guidelines encourages employees to take an active role in creating a working environment in which conflict is handled in an open, honest and constructive way, and in trying to prevent destructive forms of conflict from arising.

External environment

Simula's activities do not pollute the external environment. In addition, Simula encourages environmentally responsible behavior through the way the company is run. Simula has a program for employees that choose not to drive a car to the workplace, by financially supporting their use of public transport. In 2015, 53 per cent of the employees were signed up for the program. Additionally, Simula has set a goal of being paperfree by 2015, in the sense that all administrative processes will be digital and the current total consumption of paper per person in the lab will be halved. A preliminary status report shows that the introduced measures have contributed to a significant reduction in paper consumption since 2010, as well as an increased awareness among employees.

Doctorates and Master's Degrees

This list presents MSc and PhD degrees awarded by the University of Oslo and other degree awarding institutions in Norway and abroad. The degrees are obtained by candidates that are supervised throughout their projects by Simula researchers.

PhD degrees/ Docorates	Thesis	Supervisors	Institution
Erik Løhre	Communication of predictions: effects of anchors, frames, and expressions of uncertainty	Magne Jørgensen, Karl Halvor Teigen, Geir Kirkebøen	UiO - Department of psychology
Håkon Kvale Stensland	Processing Multimedia Workloads on Heterogeneous Multicore Architectures	Carsten Griwodz, Pål Halvorsen	UiO - Department of Informatics
Stefano Di Alesio	Supporting Stress Testing in Real-Time Systems with Constraint Programming	Lionel Briand, Shiva Nejati, Arnaud Gotlieb	University of Luxembourg
Sunil Nair	Characterization of Safety Evidence for Assessment and Certification of Critical Systems	Tim Kelly, Jose Luis dela Vara, Magne Jørgensen	UiO - Department of Informatics
Shuai Wang	Systematic Product Line Testing: Methodologies, Automation, and Industrial Application	Shaukat Ali, Arnaud Gotlieb, Magne Jørgensen	UiO - Department of Informatics
Morten Mossige	Testing Robotics Software using Constraint Programming in a Continuous Integration Process	Jan Christian Kerlefsen, Arnaud Gotlieb, Hein Meling	University of Stavanger
Jonathan Feinberg	Some Improvements and Applications of Non-intrusive Polynomial Chaos Expansions	Hans Petter Langtangen, Arne Bang Huseby, Stuark Clark	UiO - Department of Mathematics
Amir Yazdanshenas	Towards System-Wide Analysis of Heterogeneous Component-Based Software Systems	Leon Moonen, Magne Jørgensen	UiO - Department of Informatics
Gunnar Rye Bergersen	Measuring Programming Skill	Dag Sjøberg, Tore Dybå	UiO - Department of Informatics
Mohammed Sourouri	Scalable Heterogeneous Supercomputing: Programming Methodologies and Automated Code Generation	Xing Cai, Scott B. Baden, Johan Simon Seland	UiO - Department of Informatics

Master's degrees	Title of thesis	Supervisor	Co-supervisor	Institution
Nobia Sadiq	Formalizing the ISO/IEC/ IEEE 29119 Software Testing Standard to Facilitate the Development of New Model-Based Testing Techniques	Shaukat Ali	Aurilla Aurelie Arntzen	The University College of Southeast Norway (USN)
Zhixian Bao	Distributed Home Energy Management System with Electric Vehicles	Yan Zhang	Sabita Maha-rjan, Wantanee Viriyasitavat (NTNU)	Norwegian University of Science and Technology
Zeno Albisser	Computer-Aided Screening of Capsule Endoscopy Videos	Pål Halvorsen	Michael Riegler	UiO - Department of Informatics
Heidi-Christin Bernhoff-Jacobsen	Accelerating Numerical Simulations on Multiple GPUs with Multiple CUDA Streams	Xing Cai		UiO - Department of Informatics
Henrik Bjørlo	OPVQ and OpenVQ: Creating free software tools for video quality assessment	Carsten Griwodz		UiO - Department of Informatics
Thuc Tuan Hoang	pmSys: Implementation of a digital Player Monitoring System	Pål Halvorsen		UiO - Department of Informatics
Mads Johannessen	Investigate reordering in Linux TCP	Carsten Griwodz		UiO - Department of Informatics
Mattias Håheim Johnsen	Interactive Zooming and Panning in Panoramic Video using WebGL	Pål Halvorsen		UiO - Department of Informatics
Kenneth Klette Jonassen	Implementing CAIA Delay-Gradient in Linux	Andreas Petlund	Carsten Griwodz	UiO - Department of Informatics
Lars Bjørlykke Kristiansen	PCIe Device Lending – Using Non-Transparent Bridges to Share Devices	Håkon Stensland	Carsten Griwodz	UiO - Department of Informatics

Master's degrees	Title of thesis	Supervisor	Co-supervisor	Institution
Snorre Lærum	Bagadus App: Notational data capture and instant video analy-sis using mobile devices	Pål Halvorsen		UiO - Department of Informatics
Marek Machnik	Crowdpinion: Obtaining people's momentary opinion in dynamic environments	Sagar Sen	Magne Jørgensen	UiO - Department of Informatics
Ahmed Yusuf Mahamud	Exploring InfiniBand Congestion Control	Ernst Gunnar Gran	Paal Engelstad (HiOA)	UiO - Department of Informatics
Thiseas Mengos	Device to Device Communication	Yan Zhang, Stein Gjessing		UiO - Department of Informatics
Jon Hammeren Nilsson	Bagadus App: Notational data capture and instant video analy-sis using mobile devices	Pål Halvorsen		UiO - Department of Informatics
Henrik Nårstad	Long-range RDMA over PCI Express	Håkon Stensland	Andreas Petlund, Carsten Griwodz	UiO - Department of Informatics
Bendik Opstad	Taming Redudant Data Bundling - Balancing fairness and latency for redundant bundling in TCP	Andreas Petlund	Carsten Griwodz, Pål Halvorsen	UiO - Department of Informatics
Georgios Patounas	Denial of Service attacks in vehicle platoons	Yan Zhang	Stein Gjessing	UiO - Department of Informatics
Dipesh Pradhan	Test Case Optimization using Weight-Based Search Algorithms in a Maritime Application	Shaukat Ali	Tao Yue	UiO - Department of Informatics
Anders Emil Rønning	Bagadus App: Notational data capture and instant video analy-sis using mobile devices	Pål Halvorsen		UiO - Department of Informatics

Master's degrees	Title of thesis	Supervisor	Co-supervisor	Institution
Patrick Skevik	Study of how handovers in mobile broadband affects TCP	Kristian Evensen	Carsten Griwodz, Audun Fosselie Hansen	UiO - Department of Informatics
Øyvind Skjøld	Investigating the Impact of Processor Gating Techniques on Energy Consumption Modelling	Kristoffer Robin Stokke	Håkon Stensland	UiO - Department of Informatics
Andreas Thuen	Federated Service Discovery – Intercon-necting different Web Service Discovery Mechanisms	Frank Johnsen (FFI)	Carsten Griwodz	UiO - Department of Informatics
Kennet Vuong	PmSys: a monitoring system for sports athlete load, wellness & injury monitoring	Pål Halvorsen		UiO - Department of Informatics
Bård Eirik Winther	Human Action Retrieval in the sport analytic system Bagadus	Lilian Calvet	Carsten Griwodz, Michael Riegler	UiO - Department of Informatics
Vegard Øye	Accelerating nonlinear image transformations with OpenGL ES: A study on fish-eye undistortion	Andreas Aa Hansen	Carsten Griwodz	UiO - Department of Informatics
Evmorfia Andritsopoulou	Visualizing Subduction Using Statistical Modelling Applied to the Cascadia Slab	Stuart Clark	Are Magnus Bruaset, Karsten Trulsen	UiO - Department of Mathematics
Kristian Brox	Comparison of some preconditioners for the coupled Navier-Stokes equations	Kent-Andre Mardal	Magne Nordaas	UiO - Department of Mathemat-ics
Ingrid Elgsaas-Vada	Iterative Solvers for Dif-fusion Equations Arising in Models of Calcium Dynamics	Glenn Lines	Aslak Tveito, Knut Mørken	UiO - Department of Mathematics

Master's degrees	Title of thesis	Supervisor	Co-supervisor	Institution
Ada Johanne Ellingsrud	Preconditioning unied mixed discretizations of coupled Darcy Stokes Flow	Kent-Andre Mardal	Rainer Helmig (Stuttgart)	UiO - Department of Mathematics
Per Thomas Haga	Numerical simulations of advection-dominated sca-lar mixing with applications to spinal CSF flow and drug transport	Mikael Mortensen	Kent-Andre Mardal	UiO - Department of Mathematics
Karoline Horgmo Jæger	An Investigation of Necessary Grid Resolution for Numerical Simulations of Calcium Dynamics in Cardiac Cells	Aslak Tveito	Glenn Lines	UiO - Department of Mathematics
Daniel Mo Housmand	CFD simulations in indeal-ized expanded bifurcation geometry	Mikael Mortensen	Atle Jensen	UiO - Department of Mathematics
Karoline Kalleberg	Modeling the Electrical Activity in the Ventricles with Focus on the Purkinje-Myocardial Coupling	Joakim Sundnes	Pan Li	UiO - Department of Mathematics
Hoang Bao Ngo	Panorama Video Tiling: Efficient Processing and Encoding og Tiles	Pål Halvorsen		UiO - Department of Informatics
Cong Nguyen Nguyen	Implementation of a digital Player Monitoring System: pmSys	Pål Halvorsen		UiO - Department of Informaticss
Kristian Skarseth	OPVQ and OpenVQ: Creating free software tools for video quality assessment	Carsten Griwodz		UiO - Department of Informatics

List of publications 2015

Simula only reports publications where a signicant part of the research has been funded by Simula. This means that at least one of the authors of the reported publications must have his / her main affiliation with Simula, and has contributed to the publication as specified in Simula's publication guidelines. Publications from people in part-time positions at Simula are generally not counted unless the research is specifically performed as part of their employment at Simula. Such exceptions from the main rule are very few and must in all cases be approved by the head of department.

Articles in International Journals

01 *Audiovisual robustness: Exploring perceptual tolerance to asynchrony and quality distortion*, R. Eg, C. Griwodz, P. Halvorsen and D. M. Behne, Multimedia Tools and Applications, vol. 74, pp. 345—365, 2015

02 *Cost-Effective Test Suite Minimization in Product Lines Using Search Techniques*, S. Wang, S. Ali and A. Gotlie Journal of Systems and Software, vol. 103, pp. 370–391, 2015

03 *Designing Large Arrays of Tidal Turbines: a Synthesis and Review* R. Venell, S. W. Funke, S. Draper, C. Stevens and T. Divett Renewable & Sustainable Energy Reviews, vol. 41, pp. 454—472, 2015

04 *Parallel performance modeling of irregular applications in cell-centered finite volume methods over unstructured tetrahedral meshes,* J. Langguth, N. Wu, J. Chai and X. Cai, Journal of Parallel and Distributed Computing, vol. 76, pp. 120—131, 2015

05 *Evidence Management for Compliance of Critical Systems with Safety Standards: A Survey on the State of Practice*, S. Nair, J. L. de la Vara, M. Sabetzadeh and D. Falessi , Information and Software Technology, vol. 60, pp. 1—15, 2015

06 *Adaptive Finite Element Solution of Multiscale PDE-ODE Systems*, A. Johansson, J. Chaudhry, V. Carey, D. Estep, V. Ginting, M. G. Larson and S. Tavener, Computer Methods in Applied Mechanics and Engineering, vol. 287, pp. 150—171, 2015

07 *Communication-Hiding Programming for Clusters with Multi-Coprocessor Nodes*, X. Dong, M. Wen, J. Chai, X. Cai, M. Zhao and C. Zhang, Concurrency and Computation: Practice and Experience, vol. 27, pp. 4172–4185, 2015

08 Enabling a Uniform OpenCL Device View for Heterogeneous Platforms, D. Huang, C. Xun, N. Wu, M. Wen, C. Zhang, X. Cai and Q. Yang, IEICE Transactions on Information and Systems, vol. E98-D, pp. 812—823, 2015

09 *An Evaluation of Tail Loss Recovery Mechanisms for TCP*, M. Rajiullah, P. Hurtig, A. Brunström, A. Petlund and M. Welzl, SIGCOMM Comput. Commun. Rev., vol. 45, pp. 5—11, 2015

10 *A Stabilized Cut Finite Element Method for the Three Field Stokes Problem*, E. Burman, S. Claus and A. Massing, SIAM J. Sci. Comput., vol. 37, pp. A1705—A1726, 2015

11 *Calcium Signaling in Developing Cardiomyocytes: Implications for Model Systems and Disease*, W. E. Louch, J. Koivumäki and P. Tavi, The Journal of Physiology, vol. 593, pp. 1047—1063, 2015

12 *Increased Membrane Capacitance Is the Dominant Mechanism of Stretch-Dependent Conduction Slowing in the Rabbit Heart: a Computational Study*, B. L. de Oliveira, J. Sundnes, S. Wall and A. D. McCulloch, Cellular and Molecular Bioengineering, vol. 8, pp. 237—246, 2015

13 *Deflation Techniques for Finding Distinct Solutions of Nonlinear Partial Differential Equations,* P. E. Farrell, A. Birkisson and S. W. Funke, SIAM Journal on Scientific Computing, vol. 37, pp. A2026—A2045, 2015

14 *Combining Genetic Algorithms and Constraint Programming to Support Stress Testing of Task Deadlines,* S. Di Alesio, S. Nejati, L. Briand and A. Gotlieb, ACM Transactions on Software Engineering and Methodology (TOSEM), vol. 25, 2015

15 *Towards Simulation of Subcellular Calcium Dynamics at Nanometre Resolution*, J. Chai, J. E. Hake, N. Wu, M. Wen, X. Cai, G. T. Lines, J. Yang, H. Su, C. Zhang and X. Liao, International Journal of High Performance Computing Applications, vol. 29, pp. 51—63, 2015

16 *aToucan: an Automated Framework to Derive UML Analysis Models From Use Case Models*, T. Yue, L. Briand and Y. Labiche, ACM Transactions on Software Engineering and Methodology, vol. 24, 2015

17 *The Multidimensional Moving Boundary Problem Governed by Anomalous Diffusion: Analytical and Numerical Approach*, N. Vasylyeva and L. Vynnytska, Nonlinear Differential Equations and Applications, vol. 22, pp. 543—577, 2015

18 Cretaceous-Cenozoic sedimentary budgets of the Southern Mozambique Basin: implications for uplift history of the South African Plateau, A. Said, C. Moder, S. R. Clark and B. Ghorbal, Journal of African Earth Sciences, vol. 109, pp. 1—10, 2015

19 *Towards Evidence-Based Recommendations to Guide the Evolution of Component-Based Product Families, L. Moonen*, Science of Computer Programming, vol. 97, pp. 105—112, 2015

20 *Efficient and Cost-Effective Hybrid Congestion Control for HPC Interconnection Networks*, J. Escudero-Sahuquillo, E. G. Gran, P. J. Garcia, J. Flich, T. Skeie, O. Lysne, F. J. Quiles and J. DuatoIEEE Transactions on Parallel and Distributed Systems, vol. 26, pp. 107—119, 2015

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22 *Oasis: A high-level/high-performance open source Navier–Stokes solver*, M. Mortensen and K. Valen-Sendstad, Computer Physics Communications, vol. 188, pp. 177 — 188, 2015

23 *The Cameraman Operating My Virtual Camera Is Artificial: Can The Machine Be As Good As A Human?*, V. R. Gaddam, R. Eg, R. Langseth, C. Griwodz and P. Halvorsen, ACM Transactions on Multimedia Computing, Communications and Applications, vol. 11, pp. 56:1—56:20, 2015

24 *Early experiences with live migration of SR-IOV enabled InfiniBand*, W. L. Guay, S.-A. Reinemo, B. D. Johnsen, C.-H. Yen, T. Skeie, O. Lysne and O. Tørudbakken, Journal of Parallel and Distributed Computing, vol. 78, pp. 39—52, 2015

25 *Computational fluid dynamics evaluation of flow reversal treatment of giant basilar tip aneurysm*, M. S. Alnæs, K.-A. Mardal, S. J. Bakke and A. Sorteberg, Interventional Neuroradiology, vol. 21, 2015

26 *Poro-elastic modeling of Syringomyelia – a systematic study of the effects of pia mater, central canal, median fissure, white and gray matter on pressure wave propagation and fluid movement within the cervical spinal cord*, K.-H. Støverud, M. S. Alnæs, H. P. Langtangen, V. Haughton and K.-A. Mardal, Computer Methods in Biomechanics and Biomedical Engineering, 2015,

27 *Testing Robot Controllers using Constraint Programming and Continuous Integration, M. Mossige, A. Gotlieb and H. Meling*, Information and Software Technology, vol. 57, pp. 169—185, 2015

28 *Infeasible Path Generalization in Dynamic Symbolic Execution*, M. Delahaye, B. Botella and A. Gotlieb, Information and Software Technology, vol. 58, pp. 403–418, 2015

29 *Estimation of Inlet Flow Rates for Image-Based Aneurysm CFD Models: Where and How to Begin?*, K. Valen-Sendstad, M. Piccinelli, R. Krishnankuttyrema and D. A. Steinman, Annals of Biomedical Engineering, vol. February, pp. 1422—1431, 2015

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71 *An Overview of Constraint-Based Testing*, A. Gotlieb, Centre de Recherche en Informatique de Montreal (CRIM), 2015,

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75 *An investigation into the claims of IMSI catchers use in Oslo in late 2014, A. Elmokashfi*, Open scientific seminar on IMSI-catchers, Oslo, Norway, 2015

76 *Poroelastic modeling of Syringomyelia - the effects of pia mater, central canal, median fissure, white and grey matter on pressure wave propagation and fluid movement within the cervical spinal cord*, K.-A. Mardal, International Hydrocephalus Imaging Working Group, Chicago, 2015

77 *Role of CSF flow in the pathogenesis of Syringomyelia*, V. Haughton and K.-A. Mardal, ASNR 53rd Annual Meeting & The Foundation of the ASNR Symposium 2015, April 25 – 30, 2015; Chicago, Illinois, 2015

78 *On the complexity of the Cerebrospinal fluid flow in the upper spinal column – is the assumption of laminar flow appropriate?,* K.-A. Mardal, K. Jain, K. H. Støverud, G. Ringstad and P. K. Eide, Cerebrospinal Fluid Dynamics Society Meeting, Amiens, 2015

79 *Computational modelling of the biomechanics in the central nervous system – Chiari and syringomyelia,* K.-A. Mardal, Complex materials; Mathematical models and numerical methods, Oslo, 2015

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81 *Flows in complex geometries such as blood vessels and the central nervous system*, K.-A. Mardal, EarthFlows kick-off meeting, Oslo, 2015

82 *Reducing Latency for Linux Transport,* A. Petlund and P. Hurtig, Linux Conference Europe 2015, 2015

83 *Message merging for routing,* Á. Barbero and Ø. Ytrehus, Recent Advances

in Practical Network Coding and Distributed Storage, 2015
84 *Digitale sårbarheter - internasjonale utfordringer*, O. Lysne, Datatilsynet, 2015
85 *Digitale sårbarheter i finanssektoren, O. Lysne*, Finanstilsynet, 2015
86 Digitale sårbarheter i kommunenorge, O. Lysne, IT-sjefen i kommunal sektor, 2015
87 *Digitale sårbarheter - internasjonale utfordringer*, O. Lysne, Abelia, 2015
88 *Konklusjoner fra det digitale sårbarhetsutvalget*, O. Lysne, Polyteknisk forening, 2015
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90 *Digital sårbarhet - internasjonale utfordringer,* O. Lysne, Norsk Utenrikspolitisk Institutt (NUPI), 2015
91 *Norges digitale sårbarheter*, O. Lysne, Prime Ministers Office, 2015
92 *Digitalt sårbarhetsutvalg,* O. Lysne, Sentralt Totalforsvarsforum, 2015
93 *Norges digitale sårbarheter*, O. Lysne, Partnerforum, University of Oslo, 2015
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95 *Norges digitale sårbarhetsutvalg,* O. Lysne, Presentation for det Svenska Informationssäkerhetsråd, 2015
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97 *Vår digitale sårbarhet*, O. Lysne, Departementenes Nettverk for Informasjonssikkerhet, 2015,
98 *Telekom og sårbarhet*, O. Lysne, TEK-konferansen, 2015,
99 *Vår digitale sårbarhet*, O. Lysne, Justisdepartementet, 2015
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104 Sikkerhetskonferansen, Litteraturhuset, 2015, Digital såbarhet - teknologi og åpne spørsmål, O. Lysne, Software 2015, 2015
105 *Digital sårbarhet - teknologi og åpne spørsmål,* O. Lysne, HACKON, 2015
106 *Network coding for cyclic networks*, Á. Barbero and Ø. Ytrehus, Mathematical Coding Theory in Multimedia Streaming (15w5150), BIRS, Banff, Canada, 2015
107 *Robustness of Communication Infrastructures*, A. Elmokashfi, HISS 2015 High Integrity Systems Symposium, 2015
108 *How many ionic models do we need for modelling of the atria?*, M. Maleckar, Atrial Signals 2015, 2015
109 *Putting the pieces together: towards supplementing sparse clinical data with multi physics simulation*, M. Maleckar, Foundation Teofilo Rossi di Montelera Forum 2015, 2015
110 *Computational modelling of the biomechanics in the central nervous system – Chiari and syringomyelia*, K.-A. Mardal
111 *Oslo, Simula Research Laboratory,* 2015, Optimal Elasticity and Contraction in the Cardiac Cycle, G. Balaban, Oslo, Simula Research Laboratory, 2015
112 *Towards an Adaptive Einstein-Vlasov Solver,* A. Logg, Oslo, Simula Research Laboratory, 2015
113 *Implicitly adaptive time stepping, B. Kehlet*, Oslo, Simula Research Laboratory, 2015,
114 *New simulation technology driven by medical challenges: the Biomedical Computing Department @ Simula*, M. E. Rognes, Oslo, Simula Research Laboratory, 2015

Posters

01 *Energy and Performance Optimization of a Simple Video Encoder on the Jetson -TK1*, K. R. Stokke, H. K. Stensland and P. Halvorsen, GPU Technology Conference 2015, 2015
02 *Dysfunctional Sarcoplasmic Reticulum Ca2+ Release Underlies Arrhythmogenic Triggers in Catecholaminergic Polymorphic Ventricular Tachycardia: A Simulation Study in a Human Ventricular Myocyte Model*, N. Gaur, X. Cai and Y. Rudy, Gordons Research Conference on Cardiac Arrhythmia, 2015
03 *Dolfin-adjoint: Automatic adjoint models for FEniCS*, S. W. Funke, P. E. Farrell, D. A. Ham and M. E. Rognes, The 8th International Congress on Industrial and Applied Mathematics, 2015
04 *Mechano-electric feedback as a source of ectopic activity*, J. Sundnes, S. T. Wall, V. Timmermann and A. Tveito, Gordon Research Conference on Arrhythmia Mechanisms, Lucca, Italy, 2015
05 *Scientfic Hangman: Gamifying the Understanding of Cervical Cancer Screening Reminder Letters*, S. Sen, W. M. Butt, T. Andreassen and M. Nygaard, IPVS, 2015
06 *Dolfin-adjoint, automated adjoint models for FEniCS S,* W. Funke, P. Farrell, D. Ham and M. Rognes. SIAM Conference on Computational Science and Engineering, 2015
07 *Trusting an uncertain forecaster: Judgments of revised intervals in predictions of climate change*, E. Løhre, K.-H. Teigen and S. M. Hohle, Society for Judgment and Decision Making, 2015
08 *The Trend Effect: When a Climate Forecast is Revised, Receivers Expect Further Revisions In the Same Direction,* S. M. Hohle and K.-H. Teigen, SJDM conference 2015, 2015
09 *Vertical plate motions in the West Siberian Basin*, Y. Vibe and S. Clark, European Geosciences Union, 2015
10 *Ranolazine Prevents Phase-3 Early Afterdepolarizations in Human Atrial Myocytes by Inhibiting Na Current Non-Equilibrium Reactivation*, S. Morotti, A. D. McCulloch, D. M. Bers, A. G. Edwards and E. Grandi, Biophysical Society annual meeting, 2015

Public Outreach

01 *Små feil, store konsekvenser, B. Kehlet*, Åpen dag, Universitetet i Oslo, 2015
02 *A Self-adaptive network architecture for InfiniBand based HPC clouds*, F. Zahid, E. G. Gran and T. Skeie, Talk at 7th Cloud Control Workshop, 2015
03 *Med høy presisjon*, M. Jørgensen, Article in Computerworld Norge, 2015
04 *Tallverdieffekten: Vi rekker mer på tolv måneder enn ett år*, M. Jørgensen, Article in Computerworld Norge, 2015
05 *Verden er stort sett ikke normal, men høyreskjev*, M. Jørgensen, Article in Computerworld Norge, 2015
06 *Sitte i celle eller i åpent kontorlandskap?*, M. Jørgensen, Article in Computerworld Norge, 2015
07 *Er tiden for de store IT-anskaffelsene nå over?*, M. Jørgensen, Article in Computerworld Norge, 2015
08 *Trenger vi mer lokal eksperimentering?, M. Jørgensen*, Article in Computerworld Norway, 2015
09 *Vellykkede IT-prosjekter krever gode kunder*, M. Jørgensen, Article in Computerworld Norway, 2015
10 *Digital såbarhet - sikkert samfunn, O. Lysne,* Press conference, 2015

Other Publications

01 *Simulations of Heart Function (editorial), R. W. d. Santos, S. Alonso, E. M. Cherry and J. Sundnes*, pp. 3 pages, 2015
02 *AQM Characterization Guidelines*, N. Kuhn, P. Natarajan, N. Khademi and D. Ros, 2015
03 *Transitional flow in intracranial aneurysms–a space and time refinement study below the Kolmogorov scales using Lattice Boltzmann Method*, K. Jain, S. Roller and K.-A. Mardal, 2015

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